

PATENT CLAIMS

1. A cup-shaped drill head having an axis with a leading end and a trailing end and an inner space extending axially from the trailing end toward the leading end with an inner axially extending conical surface (2) extending from the trailing end for force-locking connection to an outer axially extending conical surface (3) of a driving drill shank (4), said drill head, said inner space having a cup base (5) having a curvature (K) with a center point (P) on said drill head axis adjacent said leading end and extending toward said inner conical surface (2), wherein in transition from said cup base (5) to said inner conical surface (2) the curvature (K) is smaller than the curvature at the center point (P).
2. A cup-shaped drill head, as set forth in claim 1, wherein said space has an inner cylindrical surface (6) extending axially from said cup base to said inner conical surface (2).
3. A cup-shaped drill head, as set forth in claim 2, wherein the transition from said cup base (5) to at least one of said inner conical surface (2) and the inner cylindrical surface (6) is mathematically smooth.
4. A cup-shaped drill head, as set forth in claim 1, wherein said cup base (5) has at least three uniformly increasing curvatures (K) differing in magnitudes from said conical surface (2) to the center point (P).
5. A cup-shaped drill head, as set forth in claim 2, wherein said inner space at the leading end thereof has a rotational inner surface mathematically analyzble function from at least one of

said inner conical surface (2) and said inner cylindrical surface to said center point (P).

6. A cup-shaped drill head, as set forth in claim 5, wherein said rotational inner surface is mathematically of the second order.
7. A cup-shaped drill head, as set forth in claim 5, wherein said rotational inner surface is a hyperparaboloid with an apex thereof at the center point (P) and has a mathematically smooth transition to at least one of said inner conical surface (2) and said inner cylindrical surface (6).
8. A cup-shaped drill head, as set forth in claim 5, wherein said rotational inner surface is a hyperellipsoid with a longest radius at said center joint (P) and a mathematically smooth transition to at least one of said inner conical surface (2) and said inner cylindrical surface (6).